



The Fibreglass Pipeline Specialists



## **Reference: GRE Tubing and Casing for Downhole Application**

This Document contains technical information about our GRE Pipe manufactured by Petroplastic that features mechanical properties, Pipe dimensions, installation procedures and complementary information.

### **Track Record**

Petroplastic has more than 20 years of experience working with GRE Tubing and Casing and has designed and installed more than 2000 Wells with GRE Tubing for different Applications such as Water Injection Wells; Water or Oil production with ESP and oil production with PCP.

GRE pipes are a successful solution for Corrosion in Oilfield; this product has several advantages over traditional Oil Country Tubular Goods (OCTG) products and generates important benefits for End Users of Oil & Gas; Mining, Thermal and Water Source Wells

### **Mechanical Properties**

- a) Maximum temperature rating: 82°C (180° F)
- b) LTHS / LCL According to 5.1.1:  
LCL@ 65°C (150°F): 15881 psi  
Hydrostatic Design Stress (HDS): 12050 psi
- c) Axial Design Basis (ADB): 22050 psi  
Axial Design Stress (ADS): 8820 psi
- d) Thermal Expansion Coefficient in Axial direction  
32 / 73.4°F (0 / 23°C) 18x10<sup>-6</sup>  
73,4 / 150°F (23 / 65.5°C) 21x10<sup>-6</sup>  
73.4 / 180°F (23 / 82.2°C) 22x10<sup>-6</sup>
- e) Hoop Tensile Modulus  
According to Appendix D - API 15HR  
Eh@ 22°C (73°F): 2.805 \* 10<sup>6</sup> psi (19342 MPa)





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$E_h@82^\circ\text{C} (180^\circ\text{F}): 2.446 * 10^6 \text{ psi} (16862 \text{ MPa})$

- f) Poisson Ratio for a circumferential axial load and the corresponding axial contraction

According to Appendix D – API 15HR

$$\mu_{\text{circ}@73^\circ\text{F}} = 0.44$$

$$\mu_{\text{circ}@180^\circ\text{F}} = 0.51$$

- g) Poisson Ratio for an Axial Tensile and the corresponding circumferential contraction.

According to Appendix F – API 15HR

$$\mu_{\text{axial}@73^\circ\text{F}} = 0.41$$

$$\mu_{\text{axial}@180^\circ\text{F}} = 0.38$$

- h) Axial Elasticity Modulus According to ASTM D 2105

$$E_a@22^\circ\text{C} (73^\circ\text{F}): 2.93 * 10^6 \text{ psi} (20229 \text{ MPa})$$

$$E_a@ 82^\circ\text{C} (180^\circ\text{F}): 2.24 * 10^6 \text{ psi} (15473 \text{ MPa})$$

- i) Short-Term Hydraulic failure pressure of pipe across the connection at  $23^\circ\text{C} (73.4^\circ\text{F})$  and at the maximum rated temperature in accordance with ASTM D1599 (free end): minimum value of 2.5 Times pressure rating

Petroplastic Procured Therm Expansion Coef - 08.03.06

Thermal Exp 2 SP8 1500 - 08.03.06 Report

Thermal Exp 2 SP8 Report 2000 - 08.03.06

Report: Mechanical Characterization of ERFV pipes of 2 7/8 "API 15HR Appendix D -

Young's Modulus and Circumferential Poisson's Ratio - 02-01-07

Info Mechanical Characterisation of 2 7/8 "API 15HR ERFV Pipe Appendix F - Young's

Modulus Longitudinal and Poisson Ratio - 02-01-07



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### **Quality Control:**

All the pipes manufactured by Petroplastic on its plant in Junín de los Andes are subject to a severe quality control that comprise from raw material reception up to the manufacturing process and testing of the final product. Raw material is tested when it arrives to manufacturing facility among the most important of them we can mention the following ones

- Epoxi Resin.**
- Anhydride Curing Agent**
- Accelerator**
- Glass Fiber**
- Pigment**
- O'Ring**

The following Quality control test are run during the production process

- |                             |   |
|-----------------------------|---|
| <b>Tg:</b>                  | Reference Figure 116,4° C                               |
| <b>Glass fiber Content:</b> | Reference Figure 75% +/- 6                              |
| <b>Thread Control:</b>      | According to API 15HR                                   |
| <b>Hydrotest:</b>           | 100% @ 1.5 Times Pressure Rating According to API 15HR. |

- |                    |  |
|--------------------|--|
| <b>Burst Test:</b> | A Burst Test is run every 5000 feet of continuous production (According to API 15HR) at least. Minimum value according pressure rating<br>$pr \leq 1500 \text{ psi}$ 2,5 times pr.<br>$1500 \text{ psi} < pr \leq 2000 \text{ psi}$ 2,25 times pr.<br>$pr > 2000 \text{ psi}$ 2 times pr |
|--------------------|--|

- |                       |  |
|-----------------------|--|
| <b>Traction Test:</b> | A Traction Test is run every 5000 feet of continuous production<br>Minimum values: 85% last value of the body of the pipe or 70% del last value of the thread. |
|-----------------------|--|



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### Combined Test:

A test is run for pipe design approval (It is not a production Test)

.Hydrostatic Load at 1.3 Times Pressure Rating  
+ 1.3 times operational axial load for 90 Minutes

All our pipes had incorporated a serial number that identifies and allows a complete traceability of each pipe.

A handwritten signature in black ink, appearing to read 'F. Saavedra'.

Ing. Fernando Saavedra  
Gerente Ingeniería  
Petroplastic S.A.





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## GRE Advantages

GRE is a composite material 100% corrosion free, it is compatible with the most aggressive fluids that are found in an oilfield: like Salted Water, CO<sub>2</sub>, H<sub>2</sub>S, Crude Oil, Gas, HCL and SRBs.

- It is light weighted and easy to install. It doesn't need special lifting equipment or special tools for the Joint Make up.
- The same crew that works in the RIG can do the pipe installation. Crew doesn't need special qualification
- The Smoother inner surface of GRE allows better Flow rates with less pressure drop. This means there will be savings in Energy and less friction loss
- Also the Smoother inner surface improves the carbonate or paraffin build up.

In Case of Corrosion, GRE Tubing and Casing are a better than the following corrosion mitigation options that can be followed using traditional Steel pipes:

### Internal Coatings or Increased WT:

- Reduction of the Tubing Drift,
- The Joints are not 100% corrosion free,
- In Argentina, Coatings don't last longer than 8 years while GRE Pipes are designed for 20 years life span
- Coating Material may fall down from the wall of the Tubing to the well bore damaging the reservoir.
- They can also accumulate in the top of WL tools that are used causing difficulties in retrieving them.



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## GRE Tubing Specification

<b>Mill Test Pressure:</b>	<b>Operating Pressure x 1.5</b>
<b>Axial Tensile Strength:</b>	21.800 Psi
<b>Axial Modulus of Elasticity:</b>	2.93 x 10 <sup>6</sup> PSI (2.02 x 10 MPa)
<b>Hoop Modulus of Elasticity:</b>	2.80 x 10 <sup>6</sup> PSI (1.93 x 10 MPa)
<b>Density:</b>	0.07 lbs/in (Sp. Gr.= 1.95)
<b>Coefficient of Thermal Expansion:</b>	1.22 x 10 <sup>-5</sup> in/ <sup>o</sup> F (10 x 10 m/m/ <sup>o</sup> C)
<b>Hazen-Williams Flow Factor:</b>	150
<b>Poissons Ratio (Hoop/Tensile):</b>	0,44
<b>Poissons Ratio (Axial Tensile):</b>	0,41

GRE Tubing manufactured by Petroplastic has an outstanding performance in Downhole corrosive application, it is mainly used in Oil and Gas Industry, in Secondary and Tertiary recovery projects.

It is manufacture by Filament Wound method with high quality raw material, that are tested in laboratories under our demanding quality standards

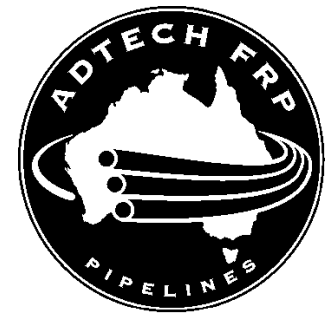
The premium 4 RD Integral Joint Connections allows an easy alignment and assemble in the Rig, and the O-ring provides a double seal. Also when the Tubing is pulled out from the bore it's strong and reliable thread can be recovered without any problem, contrary to the more thin thread like 8RD or 10RD in Fiberglass Tubing.

The Epoxy / Anhydride resin systems is suitable for high corrosive fluids like brines, Crude Oil, CO<sub>2</sub>, H<sub>2</sub>S, Produced water and HCL up to 37% in acidizing. Temperatures can go up to 180°F.

### Petroplastic Tubing (Petrotubing®) Advantages

• Corrosion Free and Long Life Span – Design for 20 years in Service
• Light Weight (1 / 4 vs Steel)
• Improved flow characteristics: 150 Hazen Williams
• 4RD Premium thread-No cross threading.
• Excellent Operating pressure and Axial Load Capabilities
• Resistant to SRB's
• Low Scale Build up





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- 2.000 installations experience with field service and engineering support
- No cathodic protection or corrosion inhibitors required
- Saving in operational and maintenance expenditures.

### Petroplastic Tubing (Petrotubing®) Application

- Water Injection Wells
- Polymer Injection Well
- Disposal Wells
- Oil Production with ESP
- Water Production with ESP
- Relining of Corroded Steel Casing
- Oil Production with PCP

### Tubing Specification:

PETROTUBING PETROPLASTIC SA																				
Nominal Size		Thread	Serie / Internal Operating Pressure @ 150°F (65,6°C)		Presión de Diseño Estática @						Nominal I.D.		Nominal O.D.		Nominal Wall Thickness		Nominal Box O.D.		Weight	
					125°F	52°C	150°F	66°C	180°F	82°C										
Inch	mm		PSI	Bar	PSI	Bar	PSI	Bar	PSI	Bar	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Lbs/ft	Kg/m
2 3/8	60	4hppR	1500	103,4	1500	103,4	1500	103,4	1250	86,2	1,95	49,5	2,29	58,2	0,171	4,34	3,35	85,1	1,14	1,69
			2000	137,9	2000	137,9	2000	137,9	1500	103,4	1,95	49,5	2,37	60,1	0,209	5,31	3,45	87,6	1,37	2,04
			2500	172,4	2500	172,4	2500	172,4	1850	127,6	1,95	49,5	2,47	62,8	0,261	6,64	3,55	90,2	1,71	2,55
			3000	206,8	3000	206,8	3000	206,8	2200	151,7	1,95	49,5	2,54	64,5	0,295	7,48	3,65	92,7	1,94	2,88
2 7/8	75	4hppR	1500	103,4	1500	103,4	1500	103,4	1100	75,8	2,48	63	2,84	72,2	0,181	4,58	4,00	101,6	1,49	2,22
			2000	137,9	2000	137,9	2000	137,9	1450	100,0	2,48	63	2,92	74,1	0,219	5,55	4,20	106,7	1,78	2,65
			2500	172,4	2500	172,4	2500	172,4	1800	124,1	2,48	63	3,05	77,5	0,285	7,24	4,40	111,8	2,31	3,44
			3000	206,8	3000	206,8	3000	206,8	2200	151,7	2,48	63	3,16	80,4	0,342	8,69	4,52	114,8	2,79	4,15
3 1/2	90	4hppR	1200	82,7	1200	82,7	1200	82,7	900	62,1	2,98	75,7	3,34	84,9	0,181	4,58	4,60	116,8	1,79	2,66
			1500	103,4	1500	103,4	1500	103,4	1100	75,8	2,98	75,7	3,42	86,8	0,219	5,55	4,70	119,4	2,13	3,17
			1750	120,7	1750	120,7	1750	120,7	1300	89,6	2,98	75,7	3,46	87,8	0,238	6,03	4,74	120,4	2,30	3,43
			2000	137,9	2000	137,9	2000	137,9	1450	100,0	2,98	75,7	3,51	89,2	0,266	6,76	4,85	123,2	2,57	3,82
			2250	155,1	2250	155,1	2250	155,1	1650	113,8	2,98	75,7	3,57	90,7	0,295	7,48	4,90	124,5	2,84	4,23
2500	172,4	2500	172,4	2500	172,4	1800	124,1	2,98	75,7	3,65	92,6	0,333	8,45	4,98	126,5	3,21	4,77			
4 1/2	115	4hppR	1000	68,9	1000	68,9	1000	68,9	700	48,3	3,98	101,1	4,36	110,8	0,190	4,83	5,55	141,0	2,46	3,65
			1200	82,7	1200	82,7	1200	82,7	850	58,6	3,98	101,1	4,42	112,2	0,219	5,55	5,60	142,2	2,79	4,15
			1500	103,4	1500	103,4	1500	103,4	1100	75,8	3,98	101,1	4,53	115,1	0,276	7,00	5,75	146,1	3,47	5,16
			1800	124,1	1800	124,1	1800	124,1	1300	89,6	3,98	101,1	4,65	118,0	0,333	8,45	5,81	147,6	4,17	6,21
2000	137,9	2000	137,9	2000	137,9	1450	100	3,98	101,1	4,72	119,9	0,37	9,40	5,85	148,6	4,64	6,9			







PETROTUBING PETROPLASTIC Rated Operating Values									Typical ultimate Values							
Nominal Size		Thread	Serie / Internal Operating Pressure @ 150°F (65,6°C)		Rate Axial Load		External Collapse Pressure		Axial Thread Load		Axial Wall Load		Bursting Pressure		External Collapse Pressure	
			PSI	Bar	Lbs	Kg	PSI	Bar	Lbs	Kg	Lbs	Kg	Psi	Bar	PSI	Bar
Inch	mm															
2 3/8	60	4hppR	1500	103,4	10500	4700	1700	117	45000	20400	26243	11900	3750	258,6	3750	259
			2000	137,9	13100	5900	2300	159	45000	20400	32678	14800	4500	310,3	5050	348
			2500	172,4	16900	7600	2800	193	45000	20400	41883	19000	5000	344,7	6150	424
			3000	206,8	19300	8700	3150	217	45000	20400	47957	21700	6000	413,7	6850	472
2 7/8	75	4hppR	1500	103,4	14000	6300	1050	72	58000	26300	34747	15700	3750	258,6	2300	159
			2000	137,9	17200	7800	1700	117	58000	26300	42693	19300	4500	310,3	3800	262
			2500	172,4	23000	10400	2450	169	58000	26300	57124	25900	5000	344,7	5350	369
			3000	206,8	28200	12700	2850	197	58000	26300	70029	31700	6000	413,7	6300	434
3 1/2	90	4hppR	1200	82,7	16600	7500	600	41	70000	31750	41254	18700	3000	206,8	1400	97
			1500	103,4	20400	9200	1050	72	70000	31750	50569	22900	3750	258,6	2350	162
			1750	120,7	22300	10100	1350	93	70000	31750	55308	25100	3938	271,5	2950	203
			2000	137,9	25200	11400	1800	124	70000	31750	62521	28300	4500	310,3	3950	272
			2250	155,1	28200	12700	2150	148	70000	31750	69856	31700	4750	327,5	4700	324
2500	172,4	32200	14600	2400	165	70000	31750	79829	36200	5000	344,7	5250	362			
4 1/2	115	4hppR	1000	68,9	23100	10400	300	21	90000	40800	57259	25900	2500	172,4	750	52
			1200	82,7	26700	12100	500	34	90000	40800	66321	30000	3000	206,8	1100	76
			1500	103,4	34200	15500	900	62	90000	40800	84813	38400	3750	258,6	2050	141
			1800	124,1	41900	19000	1500	103	90000	40800	103799	47100	4050	279,2	3300	228
			2000	137,9	44500	20100	1750	121	90000	40800	110237	50000	4500	310,3	3850	265

**Petroplastic Integral Joint GRE Casing General Specification**

<b>Mill Test Pressure:</b>	<b>Operating Pressure x 1.5</b>
<b>Axial Tensile Strength:</b>	21.800 Psi
<b>Axial Modulus of Elasticity:</b>	2.93 x 10 <sup>6</sup> PSI (2.02 x 10 MPa)
<b>Hoop Modulus of Elasticity:</b>	2.80 x 10 <sup>6</sup> PSI (1.93 x 10 MPa)
<b>Density:</b>	0.07 lbs/in (Sp. Gr.= 1.95)
<b>Coefficient of Thermal Expansion:</b>	1.22 x 10 <sup>-5</sup> in/ <sup>o</sup> F (10 x 10 m/m/ <sup>o</sup> C)
<b>Hazen-Williams Flow Factor:</b>	150
<b>Poisson Ratio (Hoop/Tensile):</b>	0,44
<b>Poisson Ratio (Axial Tensile):</b>	0,41

Petroplastic has a large experience in Design, manufacturing and installation of GRE Casing. In “Neuquina” Basin, an old and mature Oil and Gas basin, were secondary recovery is largely applied, Petroplastic has installed more than 500 wells for Water injection and oil production providing an High integrity Casing with large safety factors to its main customers.





Long time ago, Petroplastic has satisfactorily gone through exhaustive testing for GRE Downhole installation covering different aspects of the installations such as: Perforations; Hydraulic stimulation (Fracture), Cement Bonding, Packer and tools Setting in the inner wall of the Casing. Giving confidence to its customers to move forward to a safe installation, for a long life cycle product that create benefits for Oil and Gas operators in terms of operational and maintenance expenditures that are generated by corrosion in a bore, Petroplastic has installed more than 500 GRE Casing strings.



It is manufacture by Filament Wound method with high quality raw material, tested in laboratories under our demanding quality standards. The premium 4 RD Integral Joint Connections allows an easy alignment and assemble in the Rig, and the O-ring provides a double seal.

The Epoxy / Anhydride resin systems is suitable for high corrosive fluids like brines, Crude Oil, CO<sub>2</sub>, H<sub>2</sub>S, Produced water and HCL up to 37% in acidizing. Temperatures can go up to 82°C (180°F).





### Petroplastic Casing (Petrocasing®) Advantages

• Corrosion Free and Long Life Span – Design for 20 years in Service
• Light Weight (1 / 4 vs Steel)
• Improved flow characteristics: 150 Hazen Williams
• 4RD Premium thread-No cross threading.
• Excellent Operating pressure and Axial Load Capabilities
• Resistant to SRB's
• Low Scale Build up
• 500 installations experience with field service and engineering support
• No cathodic protection or corrosion inhibitors required
• Saving in operational and maintenance expenditures.

### Petroplastic Casing (Petrocasing®) Application

• Water Injection Wells – Tubing Less or Conventional
• Polymer Injection Well
• Disposal Wells
• Oil Production with ESP
• Water Production with ESP
• Relining of Corroded Steel Casing
• Oil Production with PCP
• Water Droppers
• Monitoring Wells





## Casing Specification:

PETROCASING PETROPLASTIC SA																	
Nominal Size		Thread	Series	Nominal Wall Thickness		Nominal I.D.		Nominal O.D.		Nominal Box O.D.		Weight		Operating pressure			
														150°F	66°C	180°F	82°C
Inch	mm			Inch	mm	Inch	mm	Inch	mm	Inch	mm	Lbs/ft	Kg/m	PSI	Bar	PSI	Bar
3 1/2	90	4hppR	190	0,190	4,83	2,98	75,7	3,36	85,4	4,60	116,8	1,88	2,80	1200	82,7	900	62,1
			230	0,230	5,84	2,98	75,7	3,44	87,4	4,70	119,4	2,24	3,33	1500	103,4	1100	75,8
			250	0,250	6,35	2,98	75,7	3,48	88,4	4,74	120,4	2,42	3,61	1750	120,7	1300	89,6
			280	0,280	7,11	2,98	75,7	3,54	89,9	4,85	123,2	2,70	4,02	2000	137,9	1450	100,0
			310	0,310	7,87	2,98	75,7	3,60	91,4	4,90	124,5	2,99	4,45	2250	155,1	1650	113,8
			350	0,350	8,89	2,98	75,7	3,68	93,5	4,98	126,5	3,38	5,02	2500	172,4	1800	124,1
4 1/2	115	4hppR	200	0,200	5,08	3,98	101,1	4,38	111,3	5,55	141,0	2,58	3,85	1000	68,9	700	48,3
			230	0,230	5,84	3,98	101,1	4,44	112,8	5,60	142,2	2,94	4,37	1200	82,7	850	58,6
			290	0,290	7,37	3,98	101,1	4,56	115,8	5,75	146,1	3,65	5,44	1500	103,4	1100	75,8
			350	0,350	8,89	3,98	101,1	4,68	118,9	5,81	147,6	4,39	6,53	1800	124,1	1300	89,6
			370	0,37	9,40	3,98	101,1	4,72	119,9	5,85	148,6	4,64	6,90	2000	137,9	1450	100
5 1/2	140	4hppR	215	0,215	5,46	4,85	123,2	5,28	134,1	6,43	163,3	3,32	4,93	1000	68,9	700	48,3
			255	0,255	6,48	4,85	123,2	5,36	136,2	6,51	165,4	3,88	5,78	1200	82,7	850	58,6
			280	0,280	7,11	4,85	123,2	5,41	137,4	6,56	166,6	4,24	6,31	1300	89,6	950	65,5
			300	0,300	7,62	4,85	123,2	5,45	138,4	6,60	167,6	4,53	6,74	1400	96,5	1050	72,4
			325	0,325	8,26	4,85	123,2	5,50	139,7	6,65	168,9	4,89	7,28	1500	103,4	1100	75,8
			360	0,360	9,14	4,85	123,2	5,57	141,5	6,72	170,7	5,41	8,04	1650	113,8	1200	82,7
			380	0,380	9,65	4,85	123,2	5,61	142,5	6,78	172,1	5,70	8,49	1750	120,7	1300	89,6
			440	0,440	11,18	4,85	123,2	5,73	145,6	6,94	176,4	6,61	9,83	2000	137,9	1450	100,0
6 5/8	170	4hppT	260	0,260	6,60	5,98	152,0	6,50	165,2	8,22	208,8	4,91	7,30	1000	68,9	700	48,3
			315	0,315	8,00	5,98	152,0	6,61	168,0	8,37	212,6	5,87	8,73	1200	82,7	850	58,6
			330	0,330	8,38	5,98	152,0	6,64	168,8	8,41	213,6	6,13	9,12	1250	86,2	900	62,1
			345	0,345	8,76	5,98	152,0	6,67	169,5	8,45	214,6	6,40	9,52	1300	89,6	950	65,5
			370	0,370	9,40	5,98	152,0	6,72	170,8	8,52	216,4	6,84	10,18	1400	96,5	1000	68,9
			400	0,400	10,16	5,98	152,0	6,78	172,3	8,60	218,4	7,38	10,98	1500	103,4	1100	75,8
			470	0,470	11,94	5,98	152,0	6,92	175,9	8,96	227,6	8,65	12,88	1750	120,7	1300	89,6
			545	0,545	13,84	5,98	152,0	7,07	179,7	9,22	234,2	10,05	14,95	2000	137,9	1450	100,0
8 5/8	220	4hppT	340	0,340	8,64	7,75	196,8	8,43	214,1	10,36	263,1	7,95	11,83	1000	68,9	700	48,3
			410	0,410	10,41	7,75	196,8	8,57	217,6	10,54	267,7	9,53	14,18	1200	82,7	850	58,6
			515	0,515	13,08	7,75	196,8	8,78	223,0	10,73	272,5	11,95	17,78	1500	103,4	1100	75,8
10 3/4"	250	4hppT	200	0,200	4,92	9,50	241,2	9,90	251,0	11,86	301,20	5,49	8,18	500	34,50	350	24,1
			315	0,315	7,97	9,50	241,2	10,13	257,1	12,04	305,82	8,99	13,40	800	55,20	550	37,9





PETROCASING PETROPLASTIC SA				Rated Values				Ultimate typical Values							
Nominal Size		Thread	Series	Axial Load		External Collapse pressure		Thread Axial Load		Wall Axial Load		Bursting Pressure		External Collapse pressure	
				Lbs	Kg	PSI	Bar	Lbs	Kg	Lbs	Kg	Psi	Bar	PSI	Bar
Inch	mm														
3 1/2	90	4hppR	190	16600	7500	600	41	70000	31750	41254	18700	3000	206,8	1400	97
			230	20400	9200	1050	72	70000	31750	50569	22900	3750	258,6	2350	162
			250	22300	10100	1350	93	70000	31750	55308	25100	3938	271,5	2950	203
			280	25200	11400	1800	124	70000	31750	62521	28300	4500	310,3	3950	272
			310	28200	12700	2150	148	70000	31750	69856	31700	4750	327,5	4700	324
			350	32200	14600	2400	165	70000	31750	79829	36200	5000	344,7	5250	362
4 1/2	115	4hppR	200	23100	10400	300	21	90000	40800	57259	25900	2500	172,4	750	52
			230	26700	12100	500	34	90000	40800	66321	30000	3000	206,8	1100	76
			290	34200	15500	900	62	90000	40800	84813	38400	3750	258,6	2050	141
			350	41900	19000	1500	103	90000	40800	103799	47100	4050	279,2	3300	228
			370	44500	20100	1750	121	90000	40800	110237	50000	4500	310,3	3850	265
5 1/2	140	4hppR	215	30100	13600	200	14	100000	45350	74586	33800	2500	172,4	500	34
			255	35900	16200	350	24	100000	45350	89161	40400	3000	206,8	850	59
			280	39700	18000	500	34	100000	45350	98382	44600	3250	224,1	1100	76
			300	42700	19300	550	38	100000	45350	105820	48000	3500	241,3	1300	90
			325	46500	21100	750	52	100000	45350	115195	52200	3750	258,6	1650	114
			360	50000	22600	950	66	100000	45350	128463	58300	3750	258,6	2150	148
			380	50000	22600	1100	76	100000	45350	136121	61700	3938	271,5	2450	169
			440	50000	22600	1650	114	100000	45350	159422	72300	4500	310,3	3600	248
6 5/8	170	4hppT	260	44800	20300	200	14	172500	78245	111189	50400	2500	172,4	500	34
			315	54800	24800	350	24	172500	78245	135896	61600	3000	206,8	850	59
			330	57600	26100	400	28	172500	78245	142706	64700	3125	215,5	950	66
			345	60300	27300	500	34	172500	78245	149547	67800	3250	224,1	1100	76
			370	65000	29500	550	38	172500	78245	161017	73000	3500	241,3	1300	90
			400	70600	32000	700	48	172500	78245	174895	79300	3750	258,6	1600	110
			470	75000	34000	1150	79	172500	78245	207754	94200	3938	271,5	2500	172
			545	75000	34000	1650	114	172500	78245	243706	110600	4500	310,3	3650	252
8 5/8	220	4hppT	340	76000	34400	200	14	230000	104300	188834	85400	2500	172,4	500	34
			410	92400	41900	350	24	230000	104300	229074	103900	3000	206,8	850	59
			515	115000	52100	700	48	230000	104300	291443	132200	3750	258,6	1600	110
10 3/4"	250	4hppT	200	21900	9950	17	1	280000	127000	54400	24500	1250	86,18	39	3
			315	35000	15800	80,5	6	280000	127000	87000	39500	2000	137,9	185	13

**Petroplastic Experience in GRE Downhole Application**

Petroplastic has more than 25 years of experience in GRE Downhole applications, working in the complete process, including design, manufacturing, and installation of the pipes, completing more than 2500 successful installations with GRE Casing and Tubing for Oil & Gas wells.

Taking in consideration the different applications Petroplastic installations are described below:

1. GRE Tubing for Water injection Wells: 2.000 wells.
2. GRE Tubing for Oil and Water Production with ESP: 20 Wells.
3. GRE Tubing Oil production Tubing with PCP: 30 Wells.
4. GRE Casing for Water injection or Production wells: 500 Wells

